



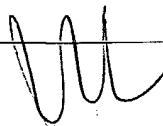
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/635,095	08/06/2003	Jennifer L. Liedtke	GP-302696	6992
7590	07/30/2004		EXAMINER	
LESLIE C. HODGES General Motors Corporation Legal Staff, Mail Code: 482-C23-B21 P.O. Box 300 Detroit, MI 48265-3000			ESHETE, ZELALEM	
			ART UNIT	PAPER NUMBER
			3748	
			DATE MAILED: 07/30/2004	

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/635,095	LIEDTKE ET AL. 
Examiner	Art Unit	
Zelalem Eshete	3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-4,7-9 is/are rejected.
- 7) Claim(s) 5 and 6 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All    b) Some \* c) None of:  
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____	6) <input type="checkbox"/> Other: _____

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 8,9 recite the limitation "the tapered lower end" in lines 1,2. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1,4,7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leman et al. (US2004/0050349) in view of Mayer (4,050,359), and further in view of Kadlicko(US2002/0157531).

Regarding claims 1,4: Leman discloses an integrated hydraulic valve actuator comprising: a housing internally defining a through opening, a housing internally defining a stepped bore having an upper major diameter, a middle intermediate diameter, and a lower minor diameter (see numeral 12); the piston subassembly received in the cylinder for actuating an engine valve (see numerals 24,26), the subassembly including a boost piston defining an internal cylinder and a drive piston

extending through and reciprocable in the internal cylinder of the boost piston (see numerals 20,22).

Leman fails to disclose a cylindrical liner received in an upper portion of the housing or in the major diameter of the stepped bore, the liner internally defining a cylinder and riding surface receiving a reciprocable piston subassembly, the liner cylinder being open to receive pressurized fluid to axially move the piston subassembly within the cylinder, and a drive piston position sensor extending into the housing and engaging a cam on the drive piston to sense the position of the drive piston within the cylinder.

However, Mayer teaches a cylindrical liner received in an upper portion of the housing, the liner internally defining a cylinder and riding surface receiving a reciprocable piston subassembly, the liner cylinder being open to receive pressurized fluid to axially move the piston subassembly within the cylinder (see figure 4).

Furthermore, Kadlicko teaches a drive piston position sensor extending into the housing and engaging a cam on the drive piston to sense the position of the drive piston within the cylinder (see paragraph 0007).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Leman's device by providing a liner as taught by Mayer in order to direct the pressurized fluid as taught by Mayer. In addition, it would also have been obvious to further modify the device by providing a position sensor as taught by Kadlicko in order to monitor the position of the valve.

Regarding claims 7,9: Kadlico teaches tapered or inclined interface on the piston assembly for sensing the position (see paragraph 0007). Kadlico discloses the claimed invention except for integrating the interface with the piston body. It would have been obvious to one having ordinary skill in the art at the time the invention was made to integrate the piston/interface by using a tapered piston depending on the applied sensor, since it has been held that constructing a formerly various elements into an integral structure involves only routine skill in the art. *Nerwin v. Erlichman*, 168 USPQ 177, 179.

Regarding claim 8: Lemanin view of Mayer, and further in view of Kadlicko discloses the claimed invention as recited above; and Leman further discloses the drive piston is engageable with the boost piston to limit upward travel of the drive piston (see numeral 22).

4. Claims 2,3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leman et al. (US2004/0050349) in view of Mayer (4,050,359), and further in view of Kadlicko(US2002/0157531) as applied to claim 1 above; and further in view of Hyashida (4,162,616).

Leman in view of Mayer and further in view of Kadlicko discloses the claimed invention as recited above; however, fails to disclose the housing and the liner is formed of metal.

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However, Hayashida teaches housing and liner formed of metal to receive a piston slidably therein (see abstract).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the device of Leman in view of Mayer and further in view of Kadlicko by making the housing and the liner out of metal as taught by Hayashida in order to produce durable device.

***Allowable Subject Matter***

5. Claims 5,6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zelalem Eshete whose telephone number is (703) 306-4239. The examiner can normally be reached on Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Denion can be reached on (703) 308-2623. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Zelalem Eshete  
Examiner  
Art Unit 3748

Z

*Thomas Denion*  
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SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3700